

# RACE-CROSSING AND GLANDS ✓

## Some Human Hybrids and their Parent Stocks

(Paper read at the ninth meeting, 1930, of the International Federation of Eugenic Organizations.)

By JON ALFRED MJÖEN

**T**HE earlier displacements of population, the migrations of which history relates, usually took place during long epochs of time. Amongst the greatest were the migrations of the Arabs, the Semites, and the Mongols. These wholesale movements of population were of quite a different character from the Viking raids to the Mediterranean lands and Northern France, the Gothic invasion of Italy and Spain, the Normans' conquering expeditions to England, the expulsion of the Huguenots, or the emigration of the Puritans to the United States, and of the Walloons to Sweden.

But even the most stupendous invasions that history records, hardly assumed such dimensions as the movements of population we have witnessed in our own days. The system of control that is called inspection of passports shows, for example, that the racial elements of alien origin which in a *three-year period* after the War have crossed the frontier into Central Europe from the East, number no less than 600,000. The emigrants from the East settled in Berlin, Paris, and other large cities (according as the rate of exchange varied!), and to-day they form a constantly increasing contingent of Asiatics, Russians, Poles, Galicians, Greeks, and various others. New York alone was invaded, in the course of a three-year period, by a similar contingent of foreign racial elements amounting to about one and a half million.

Nobody who with open eyes has observed the masses in the great modern cities, Paris, Berlin, New York, Chicago, will have failed to be struck by the manner in which the racial physiognomy of the population is

in process of changing. Clean, open racial features are becoming more and more rare in these masses in the slums, which in the real sense of the word are amorphous. All unity of form is dissolved, and a hideous confusion of all possible colours and shapes from all the races of the earth has taken its place.

The picture which we see before our eyes every day, so to speak, on journeys in Europe, North Africa, and America, raises a question of importance: What will be the effect, the final result of this gigantic blood-mixing? The picture gives an impression of lack of guiding-instinct, lack of stability and balance. But is this lack of balance a result of social or biological causes; and have we any reason to believe that crossing with foreign races will have a deleterious effect upon the native stock?

In order to find a reliable answer to this question and reach a firm basis, we can go different ways. We can make experiments on plants and animals in order to find out the somatic changes following race-crossings in general. We can also make observations on human material. What we can *not* do is to *experiment* with human material. But fortunately humans sometimes make the experiments for us. Not all of these experiments, though, are of equal value for such observations.

We find quite a considerable literature on human race-crossing; but most of it consists of 'observations' made by travellers and explorers, and very few of these rest on scientific ground, on measurements, for instance, of *single traits*, whose quality can be expressed numerically. If the measurements of such qualities are to be of any

value, we must choose a place where the two or more parent races are reasonably distinct in such characters as body-size, colour of hair, skin, and eyes, or size and function of the inner organs, lungs, muscular strength, and so on, and, of course, in such psychic qualities as intelligence. If, for instance, the stature of a family group of one race is 1.74 m. (males) or a little above, and the stature of a family group of another race is 1.60 m. or a little less, it would be of immense interest to see whether the hybrids took after the taller race or the shorter, whether they fell between the two, as would be expected, or whether there was such a disturbance of the growth factor or factors as to give a wider range of figures for stature than in either of the parent races.

#### CROSSING THE NORDIC AND MONGOL

Such a place is the northern part of Norway and Sweden, where widely different races are to be found in easily distinguishable groups, and where the conditions are favourable for the study of race-crossings. Moreover, the social conditions are clear and perspicuous. Here the two races, the Mongoloid Lapps and the Nordics have more or less adapted themselves to the same environment. This is of much importance, as it excludes the social factor and leaves only the biological. Both races have gone through the same process of selection during several thousand years.

On account of these considerations we decided to choose Northern Norway (Röros, Nordland, Finmarken) for our observations and measurements, and we made in the course of twenty years several visits from our laboratory to the Lapp camps. On these expeditions we measured about 600 Nordics, 600 Lapps and more than 300 hybrids. The result for muscular strength and volume of lungs is given in Figs. 1a and 1b on pages 34 and 35.

Later on we continued the measurements in other parts of the country and found somewhat smaller variation-curves than those given in Fig. 1a and Fig. 1b.

#### DISHARMONIC GROWTH

The results of these investigations are that although we found a larger group of hybrids with harmonious faces, general good looks, decent stature, height, and strength, as well as a good correlation between volume of lungs and body-size and muscular strength and body-size, yet we found more disharmonies, both physical and mental, than in the two parent races. The most surprising discovery was that of a low mental ability combined with a comparatively good general appearance.

A further result of our observations is that the Lapp-Nordic hybrid displays a long series of disharmonious qualities, more or less perceptible, more or less important for life.

We found: Relatively large or small ears, disproportionate extremities, unusual length of body in the  $F_1$  generation, abnormal range of variation with regard to such characteristics as lung-volume and muscular strength (compare Fig. 1a), greater prevalence of diabetes (compare Fig. 2), loss of balance, and diminished resistance to tuberculosis (compare the chart, "Mortality from tuberculosis in Norway," *Journal of Heredity*, Vol. XVII, No. 5, May 1926).

#### EXPERIMENTS WITH ANIMALS

Observations made on animal crossings at our laboratory have confirmed our conclusions from human material. We found the following disharmonies in hybrid rabbits: Unsymmetrical arrangement of ears, greater range of variation in length of ears, abnormal growth and size of body in the  $F_1$  generation, derangement of correlative weight of internal organs, as well as reduced fecundity in later generations.

It may perhaps be objected that it is a matter of indifference whether a rabbit has two upright, two pendent, or one upright and one pendent ear. But it is not the lack of symmetry of the ears in itself that is of interest for us. But as a *symptom* it interests us in the very highest degree and arouses our suspicion. There is reason to suppose that similar disharmonies manifest

themselves also in other and more important traits and functions. There is no reason to assume that the ears form an exception in this respect. Experiments including measurement and weighing of the internal organs of the two parent races and of the hybrids seem to confirm this. The work has not yet been completed, but the results hitherto attained show that the ratio between the weights of the various organs is subject to derangement in the hybrid. In this respect the hybrid shows a far greater variation-curve than the pure-bred animal.

It has sometimes been asserted that most inherited characters in animals and humans are of a 'blending' nature, and that when parents differ in a trait, the offspring commonly possess an intermediate degree of it. It has been asserted that this is true of stature, weight, and of general mental powers. In a cross between individuals of different races—i.e. individuals whose *idiotypica* (genotypes) diverge from each other beyond a certain degree of variation—we can imagine several possible combinations of the hereditary qualities in the next and succeeding generations:

1.—The offspring may display all the essential characteristics of one of the two races, that race being 'pre-potent' over the other.

2.—The offspring may display all the characteristics of both races, from the colour of the eyes to the highest mental functions, as a homogeneous blend of the physical and psychic constitution of both parents or both parent-races.

3.—The offspring may display certain characteristics from each of the two races, the large lungs, for instance, of the Nordic race, the small heart of the Lapp.—"Size and function to a certain extent independent of each other."

4.—The offspring may display each characteristic of both races, in such a way that every cell, every organ becomes a mosaic composed of heterogeneous hereditary qualities.

Intermediate figures, which might be

interpreted as denoting a 'blend,' we find in our measurements of psychic traits; and from a superficial observation it might seem as if the qualities blend when the characteristics of the offspring lie between those of the parents. This is the apparent foundation for the theory of 'blending inheritance.' But we have begun to doubt whether the so-called intermediate figures can be interpreted as a proof that the parents' qualities 'blend' in the offspring.

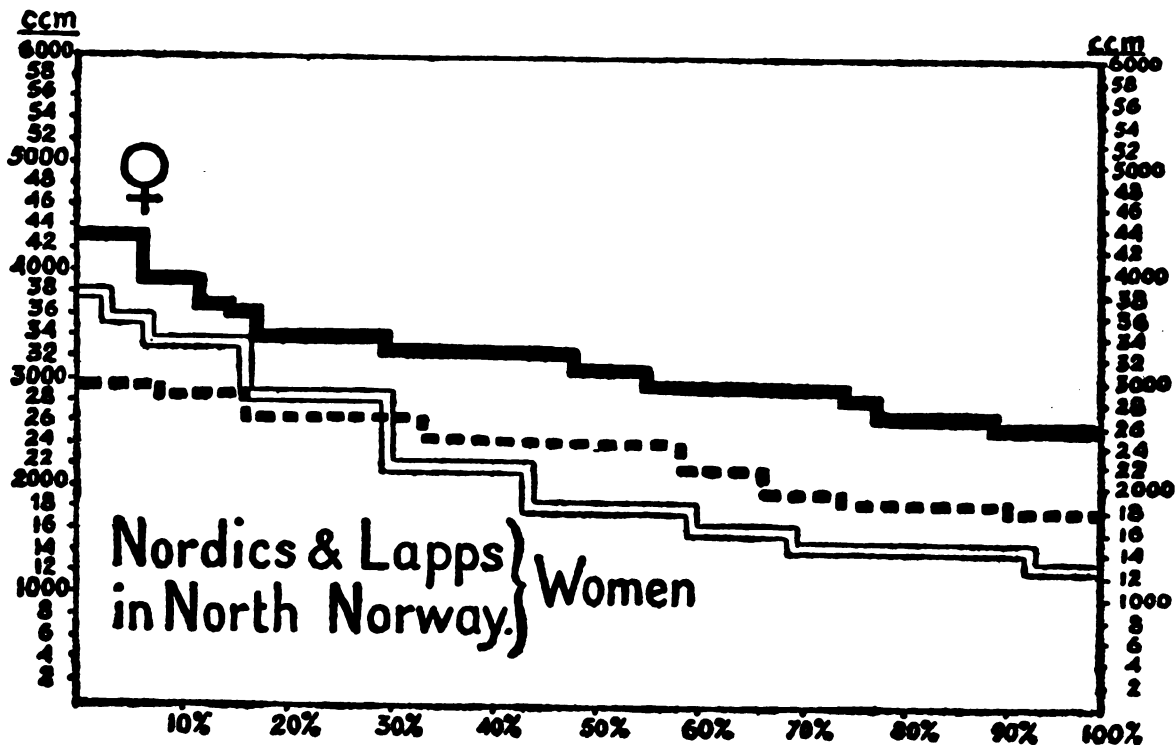
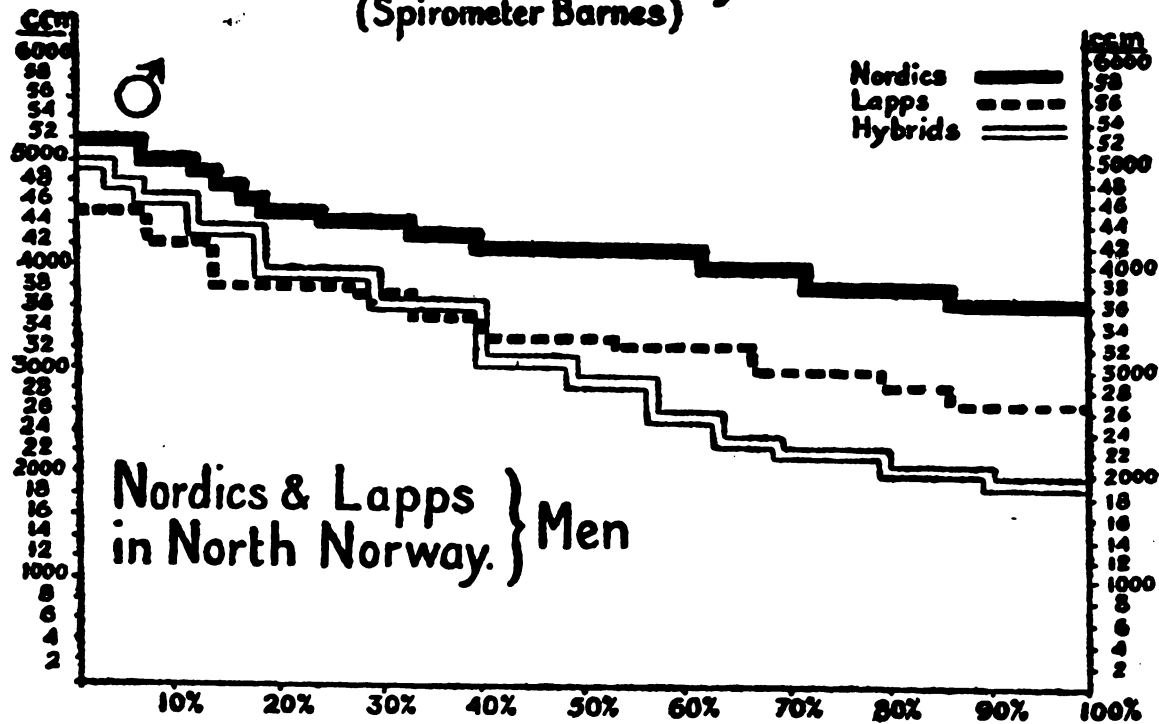
Our observations seem to suggest that human characteristics do not blend—that the 'blend' is a misunderstanding of a mosaic inheritance. I feel more and more convinced that no hybrid qualities in the deepest meaning of the expression (bio-chemical and cell-anatomical) are a homogeneous blend of the traits of the parent-races.

One of the strongest supports of the assumption that the offspring receives a homogeneous blend of the parents' qualities was thought to have been found in measurement of the head-index (see *Journal of Heredity*, Vol. XVII, No. 5, May 1926). But, as far as I can judge from the latest literature and from discussions at congresses, H. Bryn, E. Fischer, Davenport, Frets, and Ruggles Gates have all abandoned the idea of a blend—if, indeed, they ever had it. In this connection it is only necessary to cite Docent Robert Larsson, of Lund: "Davenport's comprehensive investigations of crosses between white and coloured persons must surely at last have banished from the world the old views respecting intermediate inheritance amongst human beings."

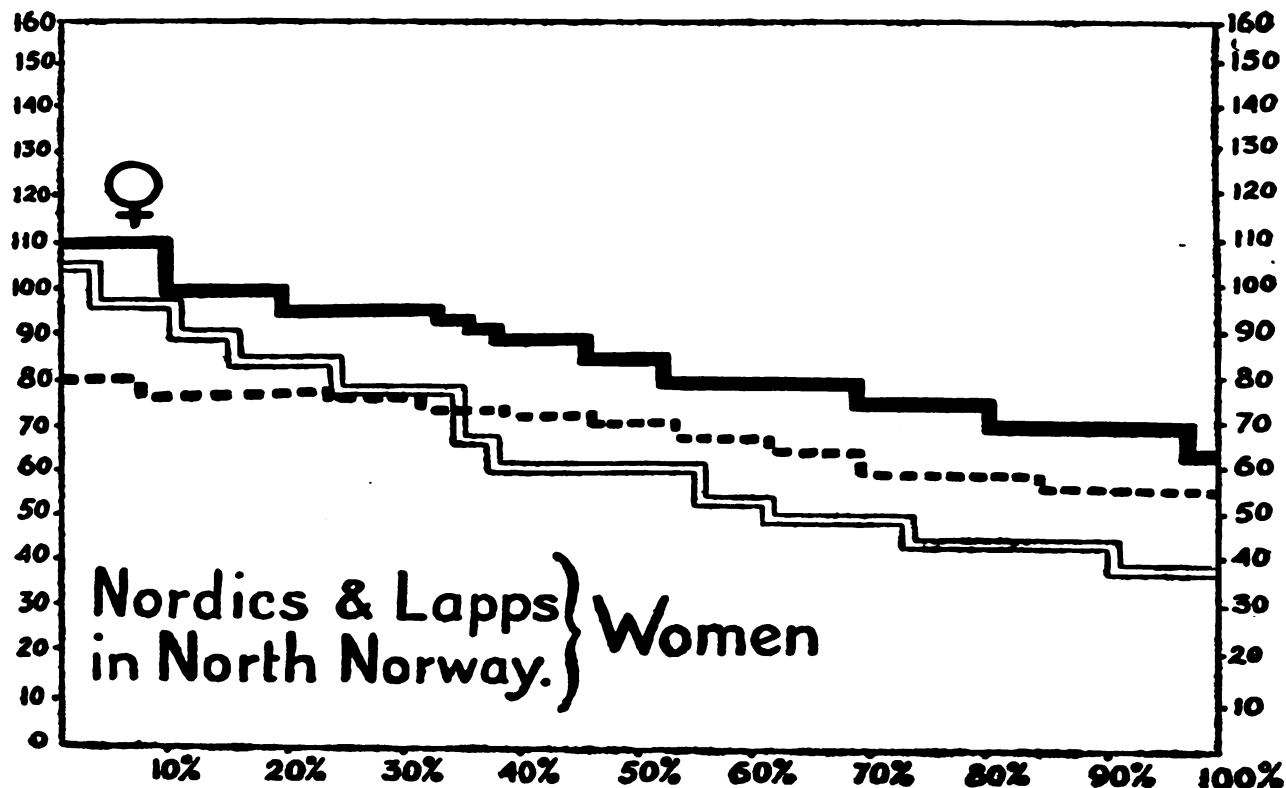
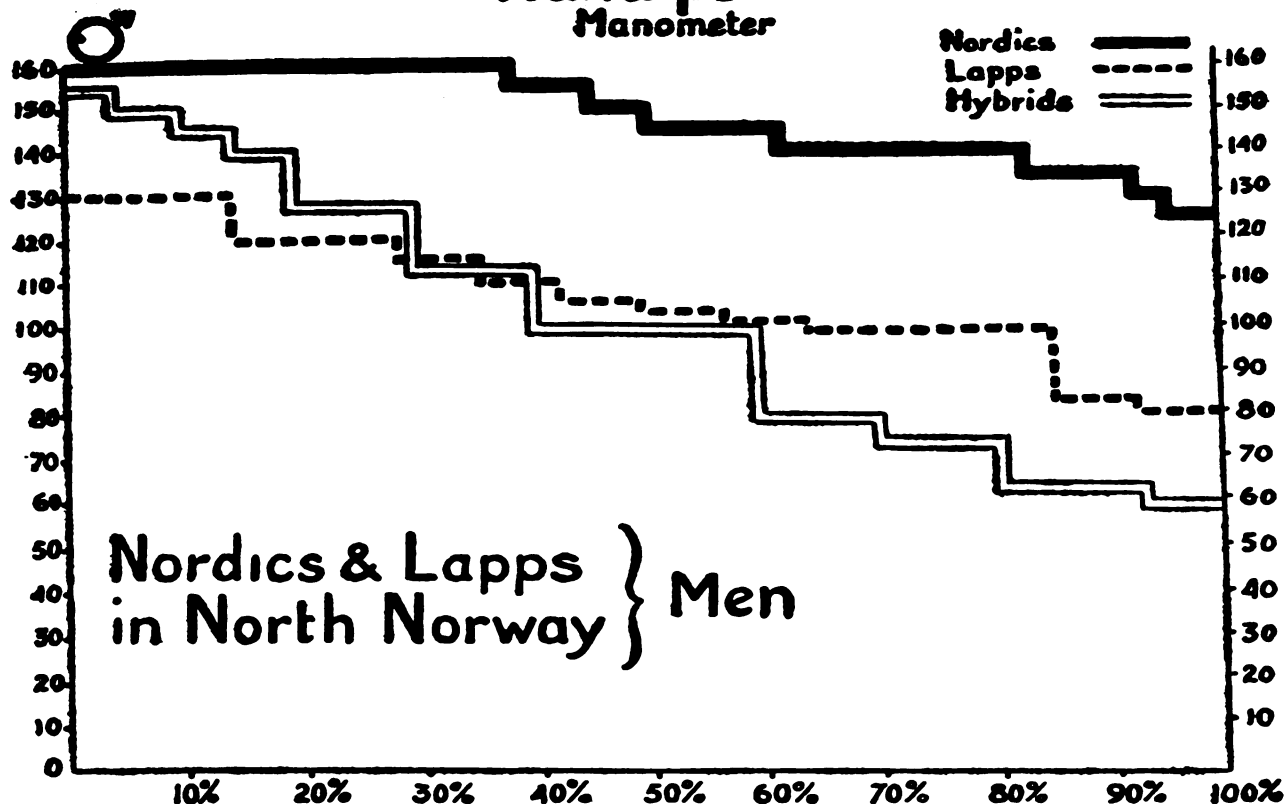
It is the mosaic heritage which gives rise to the series of disharmonies in hybrids. I speak of a "disharmonic" cross in the narrow sense when the offspring's adaptability and efficiency show a decrease in comparison with those of the parent stocks, as a result of special combinations of hereditary qualities. And in a wider sense I have introduced the term "disharmonic" for such crosses as produce unfavourable results even when compared with only one of the two parent races.

FIG. 1A.

# Volume of Lung. (Spirometer Barnes)



# Hand-power. Manometer



### THE GLANDULAR BASIS OF GROWTH

Assuming that the functioning of the various endocrine glands is dependent on different genes, it may well be that the glands in the offspring of parents of dissimilar race are, owing to the new combination of genes, more or less inharmoniously adapted to each other. There arises a derangement of the normal correlation, which may have more or less serious, or even disastrous, results for the individual concerned.

As we know, the growth of the body stands in close relation to the function of the glands. In the case of functional anomalies of the hypophysis, the thyroid, the sexual glands, and probably also of the thymus gland there arise a number of physical abnormalities. It is highly probable that the frequently observed exaggerated growth of the hybrid and his disproportionately large extremities are due to a glandular disturbance of genetic origin.

A further argument in support of the view that the glands are disturbed in the hybrid lies in the fact that we found a larger number of diabetics amongst hybrid

types than amongst families of purer race. Also, the resistance to tuberculosis seems to be diminished in the offspring of crosses. That diabetes must first and foremost be ascribed to glandular deficiency is now a known fact; and that disease resistance is lessened by glandular anomalies is probable. (See Fig. 2.)

### HYBRIDS' TEMPERAMENTAL INSTABILITY

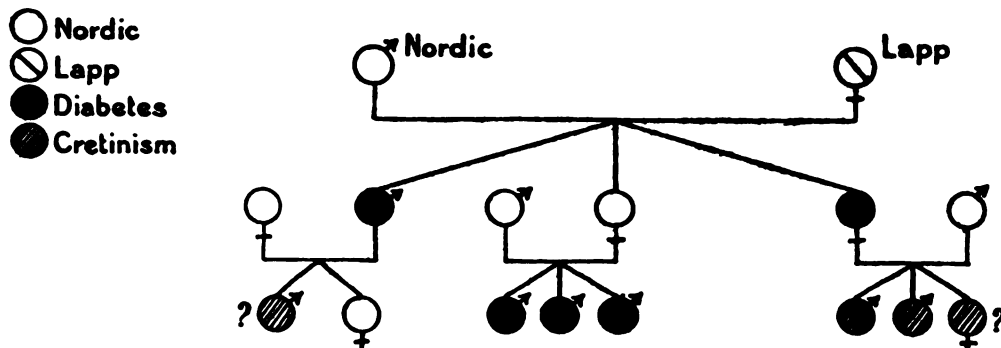
In full agreement with this suggestion of glandular disturbance is the general opinion of biologists that the human hybrid shows a typical instability in mental and moral respects—a want of balance. His motives and actions are incalculable, his impulses stronger than his self-control. I feel more and more convinced that the inmates of our prisons and asylums are to a large extent recruited from these types of mixed race, whose numbers are constantly rising on account of the increasing intercourse between populations from all parts of the world.

A special group of individuals which is causing a great deal of trouble in our northern countries, Norway and Sweden, is the Gipsy (tater) group. We know very

FIG. 2.

Vinderen Laboratorium.

### Race-Crossing & Disturbance of the Endocrine Glands.



We now know that diabetes is a glandular lesion. The frequent appearance of this malady amongst the half-breeds in Finmark points in the same direction as the other facts, namely, that race-crossing causes glandular disturbances.

The diagrammatic presentation on pp. 34 and 35 of lung-volume and muscular strength in persons of unmixed race and in hybrids shows that the range of variation for these two characteristics is far greater in the hybrid than in the man of relatively pure race.

little about their origin, except that they are badly race-mixed and have all the characteristics of unbalanced hybrids. They are vagabonds, beggars, loafers, and criminals. Whole families of this hybrid population are filling up our prisons and asylums.

One hears, of course, of prominent hybrids—Booker Washington, the American teacher and reformer, was a Mulatto, and Porfirio Diaz, President of Mexico, was a Mestizo. But they are exceptions to the rule, and they are few compared with the enormous number of human hybrids all over the world. We find it very often stated that the famous Swedish writer, August Strindberg, was of very "mixed ascendancy." I do not know how far this assertion is to be relied upon. But what would be likely to be the result if we advocated race-crossing on such premisses? If by deliberate experimental breeding of men we could produce 10,000 'Strindberg blends,' we should obtain no small contingent with Strindberg's brutality, his melancholy, his capriciousness, his violent temper, his pessimism, his cynicism towards women (though he married four times), and all his lack of self-control—and yet we might be cheated of the expected types with Strindberg's creative genius.

Davenport and Steggerda have come to similar conclusions as regards the variability and disharmony of psychic qualities in the Mulatto:

"Disharmonies in the mental sphere are socially more significant, perhaps, than those in the physical sphere, and such disharmonies are apparently common in the adult Brown. Such disharmonies and confusion apparently appear in visualization and reproduction, as in putting together the parts of the manikin [an 'intelligence test']. The proportion of failures of the Browns is 9.6 per cent., as opposed to 3.1 per cent. in Blacks and 2.1 per cent. in Whites. In copying of geometric figures 5 per cent. of Browns fail completely as compared with 3 per cent. of the Blacks and

nil per cent. of the Whites. In the Army Alpha Test IV (opposites and similars) 41 per cent. of the Browns got only 3.7 per cent. or fewer correct, while only 23 per cent. of the Blacks did so poorly and none of the Whites. One gains the general impression that, though on the *average* the Browns did not so badly, there was among them a greater number of persons than in either Blacks or Whites who were muddled and wuzzle-headed. The Blacks may have low intelligence, but they generally can use what they have in fairly effective fashion; but among the Browns there appear to be an extra 5 per cent. who seem not to be able to utilize their native endowment."

As regards certain anomalies of the eyes, Lenz remarks:

"It is to be assumed that anomalies of refraction in the eyes may also arise through race-crossing. A certain curvature of the vision, may, when occurring in conjunction with a greater length of axis, result in slight short-sightedness."

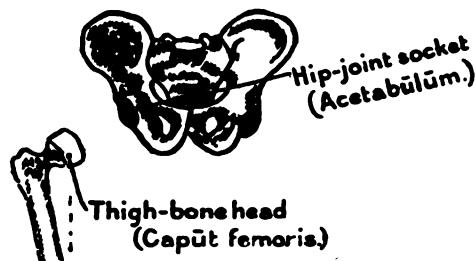
The Norwegian anthropologist, Dr. Halfdan Bryn, sums up his experiences as follows:

"I have a firm impression that crossing between Lapps and Norwegians is equally bad for both parties. I have once in a treatise drawn attention to the great number of cases of *luxatio coxæ congenitæ* amongst the hybrid population in Finmark. It has repeatedly been demonstrated that this illness occurs with many times greater frequency amongst hybrids than amongst people of unmixed race. The explanation naturally suggests itself that this may be due to the fact that the offspring has inherited the small pelvis of the Lapps with narrow hip-joint socket (acetabulum), while at the same time inheriting the Norwegians' large thigh-bone head (caput femoris), which accordingly has not room enough in the small acetabulum. But this is, of course, only a suggestion.

I have hitherto not been able to advance any proof of the correctness of the supposition. But that race-crossing often leads to disharmony is a point on which I entertain no doubt." (Compare Fig. 3.)

FIG. 3.

*Luxatio coxae congenitae.*



The offspring (hybrid) has inherited the small pelvis of the Lapps with narrow hip-joint socket (acetabulum), while at the same time inheriting the Norwegians' large thigh-bone head (caput femoris), which accordingly has not room enough in the small acetabulum. (Bryn.)

## SUMMARY

**VOLUME OF LUNGS.** Measurements of more than 600 Nordics, 600 Lapps, and more than 300 hybrids (Lapps with Nordic blood, mostly  $F_1$  generation) prove without doubt that these organs do not 'blend' in the hybrid.

**MUSCULAR STRENGTH.** Measurements of muscular strength among the Lapp-Nordic mixed population have proved that this trait does not 'blend' in the hybrid.

**BODY-LENGTH AND HETEROSIS.** Growth is dependent on gland-functions. The disturbance in the hybrid is a proof that one or more glands are more or less out of normal function.

**DIABETES.** We now know that diabetes is due to a glandular anomaly. The frequent appearance of this malady amongst the half-breeds points in the same direction—namely, that race-crossing causes glandular disturbances.

**RESISTANCE TO DISEASE.** Resistance to certain diseases is a racial characteristic, strengthened in all probability through long periods of selection. This resistance

seems to be lost in the crossing of races, owing in all probability to disturbed functioning of the glands.

**STERILITY.** On crossing three races of rabbits at Vinderen Laboratory we experienced a reduced fecundity after six or seven generations. In one of the experiments we got no offspring at all in the eighth generation. These experiments need to be confirmed before we can draw definite conclusions. We are aware of the fact that this sterility may have other causes.

The probability of hereditary disharmonies increases with increasing differences in the parental idiosyncrasies.

On account of the above-mentioned facts, which indicate that the hybrid in psychic and physical respects may be exposed to the most disastrous disturbances, it must be admitted that the question of hybridization is a problem of the very greatest importance. A problem which not only concerns scientists, but in increasing degree all social workers—especially statesmen.

In the interest of the individual, as well as of mankind as a whole, crossing between widely differing races ought as far as possible to be avoided. At least we risk nothing by acting for the present on the assumption that crossing between widely divergent races is disastrous from a genetic standpoint.

## PRACTICAL CONCLUSIONS

The glands play, as we know, a great and decisive role in the formation of man's physical and mental character. The whole ontogeny of the body down to the minutest details—formation of teeth, nails, hair, skin, bones, the secondary sexual characteristics, as well as the psychic development in intellectual and moral respects—all these are connected with, governed by, and ionized from the glands. And this gland-determined entity reappears in the offspring; its constitution and biochemistry are based upon heredity. All intellectual and emotional manifestations of the human mind are directly or indirectly in contact with the glands of internal secretion. We



have as yet only a faint idea of the ingenious and extremely delicately adjusted mechanism that displays its activity in the endocrine glands, but perhaps some day in the future we shall have recourse to these organs in order to find the foundation for, and the explanation of, the deepest mysteries of the soul. We are beginning to understand that love, hatred, perversity, a-social tendencies, creative force, energy and weakness of will, and all other forms of psychic impulses, are incited, regulated, released, and brought to disappear, all according to whether the biochemical laboratories called glands are working normally or are subjected to more or less disturbances.

In the historic moment when the sperm-cell of the male penetrates the female ovum and unites its generative substance with that of the ovum the fate of the individual is determined. All physical and psychic qualities, all that combination which we name the character of the human being, are in the instant of fecundation established once for all. What takes place later, development in the mother's uterus and development and life in autonomous human existence, are merely growth and forms of expression of the primary characteristics. Two germ-cells which thus unite to form a new independent living entity are not merely conveyors of the individual qualities possessed by the male and female parents, but rather of the qualities of the two *stocks* from which the father and mother are descended. These general considerations, with which we are all acquainted, acquire new importance in the light of what we are now beginning to learn regarding the *glands and their activity*.

The object of race hygiene is to investigate the conditions necessary for the development and propagation of human material of high value, and to point out practical means of achieving these conditions. Here the study of the glandular functions is coming to occupy a constantly more extensive and important place. To ensure the development of well-balanced and vigorous offspring it is requisite that the glandular constitution of the two parent

stocks can enter into *harmonious* combination with each other—that is to say, that the growth-tendencies which meet in the new individual shall form a uniform whole, without internal antitheses and disturbances. The most perfectly attuned functioning of the glands we find within the homogeneous parent stocks, within the *pure race*. Perhaps in the future a "race" will be defined as a group of mankind possessing in common all physical and psychic fundamentals and whose glandular functions are faultlessly harmonized. The more dissimilar the two parent stocks which are brought together through fecundation, the less perfect will be the harmony, the unity in the new individual's physical and mental formative tendencies (laws of growth). On this foundation serious objections may be raised on the part of endocrinologists against the crossing of *widely dissimilar races*, and a careful scrutiny of all cases of race-crossing may be demanded—a question which is of practical importance in, for example, my native land, owing to the Nordic-Lapp alliances.

Of course, we must be on our guard against all exaggeration. Race-biology and its daughter-science, race-hygiene, must not be mis-used in the service of racial hatred. We shall not persecute other races, but only safeguard our own. We shall love our own race; just as a man loves his father and mother, not because it is better than other races, but because it is *our* race.

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